IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl.No.:   10/085,548   Confirmation No.: 9846
Appellant: Unno
Filed: February 27, 2002
TC/AU: 2654
Examiner: Shortledge

Docket: TI-32337
Cust.No.:   23494

APPELLANT'S BRIEF

Commissioner for Patents
P.O.Box 1450
Alexandria VA   22313-1450

Sir:
        The attached sheets contain the Rule 41.37 items of appellant's brief. The

Commissioner is hereby authorized to charge the fee for filing a brief in support

of the appeal plus any other necessary fees to the deposit account of Texas

Instruments Incorporated, account No. 20-0668.

Respectfully submitted,

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Rule 41.37(c)(1)(i) Real party of interest

Texas Instruments Incorporated owns the application.

Rule 41.37(c)(1)(ii) Related appeals and interferences

There are no related dispositive appeals or interferences.

Rule 41.37(c)(1)(iii) Status of claims

Claims 1-6 are pending in the application with claims 3-4 and 6 allowed and claims 1-2 and 5 finally rejected. This appeal involves the finally rejected claims.

Rule 41.37(c)(1)(iv) Status of amendments

There is no amendment after final rejection.

Rule 41.37(c)(1)(v) Summary of claimed subject matter

The claims 1-2 invention provides a method of speech/audio CELP decoding when a frame is erased. Application Fig.4 generally shows CELP (code-excited linear prediction) decoding a frame: an excitation for the short-term filter (modeling the larynx) has a fixed codebook part and an adaptive codebook part. When a frame is erased, a substitute excitation and filter must be generated to synthesize a substitute frame. The claims 1-2 method generates a substitute excitation as a weighted sum of (i) an adaptive codebook contribution derived from prior frame(s) and (ii) a fixed codebook contribution derived from prior frame(s) where the weights depend upon a periodicity classification of prior frame(s) and the periodicity classification has at least three classes. Application Fig.1 shows the periodicity classification as "voiciing class", and description pages 14-16 describe a preferred embodiment method with the weights (α, β) for each of the three periodicity-type classes listed at the top of page 16.

The claim 5 invention is a device counterpart of the claims 1-2 invention.

<u>Rule 41.37(c)(1)(vi) Grounds of rejection to be reviewed on appeal</u>

The grounds of rejection to be reviewed on appeal are:

(1) Claims 1-2 and 5 were rejected as unpatentable over the Shoham reference in view of the Husain reference.

(2) Claim 1 was rejected under obviousness-type double patenting over claim 1 of USP 6,826,527.

<u>Rule 41.37(c)(1)(vii) Arguments</u>

Claims 1-2 and 5 were rejected as unpatentable over Shoham in view of Husain. The Examiner pointed to Shoham for erased frame reconstruction with two periodicity classes and added Husain to show reconstruction with four classes.

Appellant replies that Husain actually has only two periodicity-type classes and, more importantly, is incompatible with Shoham. In particular, Husain requires knowledge of the actual classification of the erased frame itself; see page 849, right column, full paragraph; whereas, both the claims and Shoham (column 6, lines 8-12) deduce a classification from prior frames. Thus Husain is not compatible with either Shoham or the claims, and there is no suggestion in Husain or Shoham of their combination.

Further, the classification in Husain is into classes (i) voiced, (ii) unvoiced, (iii) transition, and (iv) silence; so only the two classes (i) and (ii) are periodicity type classes. Indeed, the transition class cannot be deduced from prior frames simply because it is a transition, and this is why Husain must know the actual classification of the erased frame. And silence is not a periodicity-type class, rather it is a detection of a lack of voice activity.

Lastly, Husain does not use a set of linear combinations of adaptive codebook and fixed codebook contributions for the excitation of erased transition frames; see page 850, left column, last full paragraph (last paragraph of section 3). Thus even if Husain suggested three periodicity-type classes, there is no suggestion of an excitation for all three classes as linear combinations of adaptive and fixed codebook contributions as required by the claims.

Consequently, the claims are patentable over the references.

(2) Claim 1 was rejected for obviousness-type double patenting over claim 1 of USP 6,826,527. The Examiner asserted that dropping the periodicity classification of application claim 1 and substituting in the muting of claim 1 of USP 6,826,527 would make the claims identical.

Appellant replies that dropping the periodicity classification of application claim 1 is not obvious; see the foregoing argument.

Rule 41.37(c)(1)(viii) Claims appendix

1. A method for decoding code-excited linear prediction signals, comprising:

(a) forming an excitation for an erased interval of encoded code-excited linear prediction signals by a weighted sum of (i) an adaptive codebook contribution and (ii) a fixed codebook contribution, wherein said adaptive codebook contribution derives from an excitation and pitch and first gain of one or more intervals prior to said erased interval and said fixed codebook contribution derives from a second gain of at least one of said prior intervals;

(b) wherein said weighted sum has sets of weights depending upon a periodicity classification of at least one prior interval of encoded signals, said periodicity classification with at least three classes; and

(c) filtering said excitation.

2. The method of claim 1, wherein:

(a) said filtering includes a synthesis with synthesis filter coefficients derived from filter coefficients of said intervals prior in time.

5. A decoder for CELP encoded signals, comprising:

(a) a fixed codebook vector decoder;

(b) a fixed codebook gain decoder;

(c) an adaptive codebook gain decoder;

(d) an adaptive codebook pitch delay decoder;

(e) an excitation generator coupled to said decoders; and

(f) a synthesis filter;

(g) wherein when a received frame is erased, said decoders generate substitute outputs, said excitation generator generates a substitute excitation, said synthesis filter generates substitute filter coefficients, and said excitation generator uses a weighted sum of (i) an adaptive codebook contribution and (ii) a fixed codebook contribution with said weighted sum uses sets of weights

depending upon a periodicity classification of at least one prior frame, said periodicity classification with at least three classes;

Rule 41.37(c)(1)(ix) Evidence appendix

n/a

Rule 41.37(c)(1)(x) Related proceedings appendix

n/a